Office Action Summary	Application No. 08/893759	Applicant(s) Saith et al
	Examiner C. Chin	Group Art Unit 1641

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 4/26/99.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 7-34 is/are pending in the application.

Of the above claim(s)_____ is/are withdrawn from consideration.

☐ Claim(s)_____ is/are allowed.

☒ Claim(s) 7-34 is/are rejected.

☐ Claim(s)_____ is/are objected to.

☐ Claim(s)_____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on_____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on_____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number)_____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received:_____.

Attachm nt(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s)._____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other_____

Office Acti n Summary

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 4/26/99 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/893,759 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 U.S.C. § 112

2. Claims 7-34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for agglutination immunoassays wherein particle immobilized antibody and a liquid phase "free" antibody bind to different binding sites on the antigen, does not reasonably provide enablement for immunoassays using any type of insoluble carrier for immobilizing antibody and combination of antibodies. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Agglutinate formation requires crosslinking of the antigen-antibody complexes; and, thus use of paired antibodies which bind to different binding sites on the antigen. Based upon the instant specification, one of ordinary skill in the art would not know how else to perform the claimed methods.

3. Claims 7-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims fail to recite clear, distinct and positive method steps.

Claims 7 and 21 are confusing. On the one hand, formation of an agglutinate implies that the claimed immunoassays are agglutination assays. On the other hand, the method steps might be broadly interpreted as reading on optical measurement of the mass of immunocomplexes formed on the surface of a waveguide. Therefore, it is suggested that the preambles of claims 7 and 21 be amended to recite --An agglutination immunoassay--.

Claims 7 and 21 are unclear by implying, rather than positively stating, that at least one of the two antibodies has at least two binding sites for the target antigen, so that cross-linking or agglutination can occur. It is unclear whether the first and the second binding sites on the antigen are the same or different; and, if they are the same, are they spatially distinct so that both the first and second antibodies can simultaneously bind to the antigen.

Claims 7 and 21 are vague and indefinite in reciting "optically measuring the amount of the agglutinate". It is unclear what is being measured and correlated to detection of the antigen. Claims 7 and 2 fail to recite a method step of detecting the target antigen in the sample as recited in the claims' preamble. It is suggested that language such as --optically measuring the rate of formation of said agglutinate to determine the presence or amount of the antigen in the sample--, or equivalent be used.

In claims 8 and 22, insert --the-- before "formation" for proper antecedent support.

Claims 17 and 31 recite an improper Markush group with overlapping members; and, contain spelling errors. Claims 17 and 31 are of indeterminate scope in reciting "DNA-binding protein factors" because it is not clear what defines such factors.

Claims 19 and 33 are confusing in defining an immune-reaction accelerating component which is not present in the sample of claims 18 and 22, respectively; and, as such, claims 19 and 33 also fail to further limit claims 18 and 32.

Claim Rejections - 35 U.S.C. § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7, 10-13, and 18-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Strahilevitz.

Strahilevitz (U.S. Patent 4,375,414) discloses an agglutination immunoassay for determining a hapten, such as a drug or steroid, in a sample wherein a sample is mixed with an agglutinable carrier-bound anti-hapten antibody in suspension and then mixed with a free anti-hapten antibody. If sample contains above a minimal amount of the free hapten, agglutination

results. Although erythrocytes are the preferred carrier, other materials, such as latex or other particles, are also useful (col. 3, lines 15-37). This method has the advantage of indicating the presence of hapten by hemagglutination rather than by hemagglutination inhibition (col. 7, example 5).

6. Claims 21-27 and 29-34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Boehringer Mannheim GMBH (EP 617 285 A2).

Boehringer Mannheim GMBH (EP 617 285 A2), hereinafter EP '285 A2, discloses an agglutination immunoassay for determining analyte by binding analyte to a receptor R1 which is immobilized on a particulate carrier and a soluble receptor R2 (i.e. free antibody) which is specific for analyte and has at least two binding sites for the analyte (page 3, paragraph 3). R1 and R2 may independently be monoclonal antibodies, polyclonal antibodies, or antibody fragments (page 3, paragraphs 5 and 7). Preferably, the reaction mixture also contains an accelerator, such as 6 kd polyethylene glycol (page 5, paragraph 2). The particulate carrier is any desired particulate carrier that is known in the state of the art for performing agglutination tests, preferably latex particles, metal sols and liposomes, with sizes ranging from 10 to 500 nm (page 5, paragraph 3). The analyte is any substance that has at least two epitopes, preferably proteins or human chorionic gonadotropin (page 5, paragraph 5). Analyte concentration can be determined with suitable equipment either by nephelometry or by turbidimetry by comparison to a standard curve of known analyte concentrations (page 5, paragraph 6).

Claim Rejections - 35 U.S.C. § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strahilevitz.

See above for the teachings of Strahilevitz.

While Strahilevitz teaches detection of haptens, such as drugs and steroids like estrone, Strahilevitz differs from the instant invention in failing to teach other haptens as explicitly claimed in the Markush group of claim 17.

However, it would have been obvious to one of ordinary skill in the art to adapt the methods and reagents of Strahilevitz to other haptens of known medical importance to obtain diagnostic and therapeutic information thereof.

9. Claims 7-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cragle et al in view of Strahilevitz and Boehringer Mannheim GMBH (EP 617 285 A2).

Cragle et al (WO 85/02258) discloses an improved nephelometric immunoassay for an antigen in a fluid sample comprising contacting the sample with both a solid phase antibody and liquid phase antibody and measuring the amount of formed complexes, i.e. agglutinates, wherein

the hook effect is avoided (page 7, paragraph 2). The antibodies are independently monoclonal or polyclonal (page 9, paragraph 6).

Cragle et al differs from the instant invention in failing to teach sequential contact of two antibodies; use of calibration curve; all of the specifically claimed carrier types; all of the specifically claimed analytes; and use of an immune-reaction accelerating compound, such as 6 kd polyethylene glycol.

See above for the teachings of Strahilevitz and Boehringer Mannheim GMBH (EP 617 285 A2).

It would have been obvious to one of ordinary skill in the art to modify the methods and reagents of Cragle et al by contacting sample with the solid phase and liquid phase antibodies sequentially as suggested by Strahilevitz (solid phase antibody first followed by liquid phase antibody) or EP '285 A2 (liquid phase antibody first followed by solid phase antibody) to directly indicate analyte (Strahilevitz) or optimize sensitivity and range (EP '285 A2); to use a calibration curve suggested by EP '285 A2 to obtain quantitative results; to use any solid phase carrier typically used in agglutination assays, as suggested by EP '285 A2 for the same intended purpose; to determine any analyte of medical, economic, etc. importance known to be amenable to agglutination assays, including steroids, proteins, etc. as suggested by all three references; and to use a known immune-reaction accelerating compound, such as 6 kd polyethylene glycol, as suggested by EP '285 A2 to save time.

Conclusion

10. This is a continuation of applicant's earlier Application No. 08/893,759. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris Chin whose telephone number is (703) 308-3991. The examiner can normally be reached on Monday-Thursday from 8:30 am to 6:00 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

cchin/cc
July 7, 1999

Christopher L. Chin

CHRISTOPHER L. CHIN
PRIMARY EXAMINER
GROUP ~~1800~~ 1641

US 088937590BP1

Creation date: 01-07-2004
Indexing Officer: BSMOOT - BRIAN SMOOT
Team: OIPEBackFileIndexing
Dossier: 08893759

Legal Date: 10-27-1999

No.	Doccode	Number of pages
1	C.AD	1

Total number of pages: 1

Remarks:

Order of re-scan issued on .....